CONTENTS.

INTERNATIONAL ENGINEERING CONGRESS PAPERS.

IRRIGATION.	PAGE.
Paper No. 31IRRIGATION UNDER BRITISH ENGINEERS.	
By Sir Hanbury Brown	1
Paper No. 32.—IRRIGATION IN JAVA.	
By J. E. de Meyler	33
Paper No. 33IRRIGATION IN THE UNITED STATES.	
By Elwood Mead	83
Paper No. 34IRRIGATION AND HYDRAULIC MOTORS USED IN IRRI-	Co
GATION IN FRANCE.	
By Paul Levy Salvador	111
Paper No. 35IRRIGATION IN THE HAWAIIAN ISLANDS.	***
By M. O'Shaughnessy	129
Discussion on the Subject :	140
By Sir Thomas Higham	139
Gen. F. H. RUNDALL	150
C. J. Grant.	159
MICHAEL ELLIOT	158
ALFRED CHATTERTON	154
ALMON H. FULLER	158
H. D. Pearsall	158
L. J. LE CONTE.	160
DAVID M. DULLER	161
Sir Hanbury Brown	169
Paul Levy Salvador.	176
J. E. DE MEYIER	
MARINE ENGINEERING.	175
Paper No. 36 MARINE ENGINEERING.	
By W. F. Durand	101
Paper No. 37MARINE ENGINEERING IN FRANCE.	181
By N. Daymard and R. Lelong	0.40
Discussion on the Subject:	243
By W. Carlile Wallace	261
Sir William H. White	
LESLIE S. ROBERTSON	264
DREDGES: THEIR CONSTRUCTION AND PERFORMANCE.	268
Paper No. 38.—REVIEW OF GENERAL PRACTICE.	
By A. W. Robinson	
Paper No. 30.—DREDGING OCEAN BARS.	269
By J. C. Sanford	
Paper No. 40.—REVIEW OF GENERAL PRACTICE.	300
By J. Hersent	327
Paper No. 41.—CRANE AND LADDER DREDGES.	
By T. Kobayashi	33
Paper No. 42.—HYDRAULIC DREDGING ON THE MISSISSIPPI RIVER.	
By F. B. Maltby	391

CONTENTS.

INTERNATIONAL ENGINEERING CONGRESS PAPERS.

IRRIGATION.	PAGE.
Paper No. 31IRRIGATION UNDER BRITISH ENGINEERS.	
By Sir Hanbury Brown	1
Paper No. 32.—IRRIGATION IN JAVA.	
By J. E. de Meyler	33
Paper No. 33IRRIGATION IN THE UNITED STATES.	
By Elwood Mead	83
Paper No. 34IRRIGATION AND HYDRAULIC MOTORS USED IN IRRI-	Co
GATION IN FRANCE.	
By Paul Levy Salvador	111
Paper No. 35IRRIGATION IN THE HAWAIIAN ISLANDS.	***
By M. O'Shaughnessy	129
Discussion on the Subject :	140
By Sir Thomas Higham	139
Gen. F. H. RUNDALL	150
C. J. Grant.	159
MICHAEL ELLIOT	158
ALFRED CHATTERTON	154
ALMON H. FULLER	158
H. D. Pearsall	158
L. J. LE CONTE.	160
DAVID M. DULLER	161
Sir Hanbury Brown	169
Paul Levy Salvador.	176
J. E. DE MEYIER	
MARINE ENGINEERING.	175
Paper No. 36 MARINE ENGINEERING.	
By W. F. Durand	101
Paper No. 37MARINE ENGINEERING IN FRANCE.	181
By N. Daymard and R. Lelong	0.40
Discussion on the Subject:	243
By W. Carlile Wallace	261
Sir William H. White	
LESLIE S. ROBERTSON	264
DREDGES: THEIR CONSTRUCTION AND PERFORMANCE.	268
Paper No. 38.—REVIEW OF GENERAL PRACTICE.	
By A. W. Robinson	
Paper No. 30.—DREDGING OCEAN BARS.	269
By J. C. Sanford	
Paper No. 40.—REVIEW OF GENERAL PRACTICE.	300
By J. Hersent	327
Paper No. 41.—CRANE AND LADDER DREDGES.	
By T. Kobayashi	33
Paper No. 42.—HYDRAULIC DREDGING ON THE MISSISSIPPI RIVER.	
By F. B. Maltby	391

VII

Discu	ssion on the Subject :	PAGE.
	By A. W. Robinson	479
	J. L. LE CONTE.	482
	George Higgins	483
	WILLIAM MAYO VENABLE	496
	C. W. STURTEVANT	505
	Lewis M. Haupt	507
	WILLIAM M. HALL	507
	W. B. Gregory	508
	F. B. MALTBY	515
	J. C. SANFORD	520
VENTIL	ATION OF TUNNELS.	020
	r No. 43.—By Charles S. Churchill	523
	r No. 44.—By Francis Fox	553
	ission on the Subject:	CANA
Disco	By Charles C. Wentworth	567
	THOMAS H. JOHNSON	569
	P. F. Brendlinger	576
	CHARLES S. CHURCHILL	577
	. Chandes b. Chenonius	311
	The second secon	
	PLATES.	
	1 211 1 201	
PLATE.		PAGE.
I.	Map of Java with Lines of Equal Rainfall	35
11.	Vertical Fall at Tjiboeloe, West Canal (Buitenzorg)	51
III.	Tjihea Irrigation Works	53
IV.	General Map of Irrigated Blocks of Pategoewan System, Pasoeroean	00
77	Residency	63
V.	Movable Weir at Lengkong, Plans, Cross-Section, etc	65
VI.	Movable Weir at Lengkong	67
VII.	Type of High Wooden Flume	93
VIII.	Intake Gates, Irrigating Canal of Chateaurenard	179
IX.	Three-Cylinder Triple Expansion Engine, Mercantile Type	.211
X.	Four-Cylinder Quadruple-Expansion Engine, Mercantile Type, Longi-	
	tudinal Section	213
XI.	Four-Cylinder Quadruple-Expansion Engine, Views Forward and Aft.	215
XII.	Four-Cylinder Triple-Expansion Engine, Naval Type	217
XIII.	Type of Modern Torpedo-Boat Engine	219
XIV.	Elevator Dredge "Aberdeen," and Steel Buckets for Rock Dredging.	277
XV.	Gold Dredge and Four-Yard Dipper Dredge	281
XVI.	Dipper Dredge No. 4 and Twelve-Yard Dipper Dredge "Onondaga"	285
XVII.	Hydraulic Dredge "J. Israel Tarte" and Twenty-Inch Hydraulic	
	Dredge "King Edward"	287
XVIII.	Hydraulic Self-Propelling Dredge "Atlantic"	289
XIX.	Clam Shells: Types Used on Atlantic Coast and for Unloading Scows	291
XX.	Steam Shovels Loading Cars	293
XXI.	Shovel Loading Train of Standard Flat Cars	295
XXII.	Shovel Loading Train of 100 000-lb. Bottom-Dump Cars	297
XXIII.	Wire-Rope Shovel	301
XXIV.	U. S. Dredges "Cape Fear" and "C. B. Comstock"	305
XXV.	U. S. Dredges "Cumberland" and "Burton"	311
XXVI.	U. S. Dredge "Chinook"	313
XXVII.	U. S. Dredges "Manhattan" and "Key West"	315
XXVIII.	U. S. Dredge "Atlantic:" Outboard Profile	317
XXIX.	U. S. Dredge "Atlantic:" Longitudinal Section	319

VIII

PLATE.		PAGE.
XXX.	U. S. Dredge "Atlantic:" Cross-Sections	323
XXXI.	Twenty-Inch Rubber Suction Pipe	325
XXXII.	Twenty-Inch Drag	
XXXIII.	Dredges "Asanagi" and "Yunagi"	
XXXIV.	Dredge "Shunkai-Maru No. 1"	
XXXV.	Dredge "Shunkai-Maru No. 2"	
XXXVI.	Performance of the Hopper Dredges, "Shunkai No. 1" and "Shunkai No. 2," Combined and Cost of Transportation	
XXXVII.	Diagrams Showing Drop in Pressure and Drop in Suction on the "Delta."	
XXXVIII.	Boston Transit Commission: Plans and Sections of Two Ventilating Chambers	
XXXIX.		
25.05.25.2.001	Elkhorn Tunnel Ventilation Plant	
XL.	Sections of Tunnels Under the Mersey and Severn Rivers	559

